

EXHIBIT 1

AUTHORS	Eades, C.J. and Hintz, W.E.
TITLE	Characterization of the class I alpha-mannosidase gene family in the filamentous fungus <i>Aspergillus nidulans</i>
JOURNAL	Gene 255 (1), 25-34 (2000)

AUTHORS	Maras,M., Callewaert,N., Piens,K., Claeyskens,M., Martinet,W., Dewaele,S., Contreras,H., Dewerte,I., Penttilä,M. and Contreras,R.
TITLE	Molecular cloning and enzymatic characterization of a <i>Trichoderma reesei</i> 1,2-alpha-D-mannosidase
JOURNAL	J. Biotechnol. 77 (2-3), 255-263 (2000)

AUTHORS	Yoshida, T. and Ichishima, E.
TITLE	Molecular cloning and nucleotide sequence of the genomic DNA for 1,2- α -D-mannosidase gene, msdC from <i>Penicillium citrinum</i>
JOURNAL	Biochim. Biophys. Acta 1263 (2), 159-162 (1995)

AUTHORS	Inoue,T., Yoshida,T. and Ichishima,E.
TITLE	Molecular cloning and nucleotide sequence of the 1,2-alpha-D-mannosidase gene, mads, from <i>Aspergillus saitoi</i> and expression of the gene in yeast cells
JOURNAL	Biochim. Biophys. Acta 1253 (2), 141-145 (1995)

Penicillium.citrinum -----
Aspergillus.saitoi -----
Mms1B -----
Trichoderma.reesei -----
Mms1C -----
MPRENSSLSITAFILVLFLLHNRNTDTPAANKRATNGPANGFAROSICPSTPPPPN 60

<i>Aspergillus citrinus</i>	-----MLRL-VSPYPTVLGLSLG-STIAMS-VGSGTEVLARSESSKQKAKDAVKEAF	50
<i>Aspergillus saitoi</i>	-----MILSLSLSLTALAIAS-PGAAVPHGFGSGLVHLSSSSDTQSGRADIAIKAF	48
<i>Msa1B</i>	-----MILSLSLSLTALAIAS-PGAAVPHGFGSGLVHLSSSSDTQSGRADIAIKAF	50
<i>Trichoderma reesei</i>	-----MILLALAPAGPAAVPAVPAITRFVMSD-----SRADAVKEAF	41
<i>Msa1C</i>	-----MRFPS-SSLLVGLGLG-PALAYAPKPGIATKRGSPNP-----TRKAVKAF	43
	RTSTGGFNGNGEIPVRYVSDPTPLSTNSPAVLRQRSSPFLQSS-----ITKSRQAVKGRF	118

Penicillium citrinum QHAWNGYMKIAFHDELFTVPSNGHADSRLNGWASAVDALSTAVIMKADVVAALSHVAD 108
Aspergillus saitoi SHANGDLYQAFPHDELFLVPSNGYDSRLNGWASAVDALSTAVIMKATVNOVLDRVKG 109
MsiB SHANGDYGYAFPHDELFLVPSNGYDSRLNGWASAVDALSTAVIMKATVNOVLDRVKG 109
Trichoderma reesei QTSWNYHYHFAFHDELFLVPSNGYDSRLNGWASAVDALSTAVIMKATVNOVLDRVKG 109
MsiC ORANSYTHAWKADVDELFTVPSNGPNNRKGATLVNDLDTLIMGDDAFVNTLVQYVQ 109

Penicillium citrinum IDPSKTD-----VSLFETIRYLAGMLSGYDLIGSPAKNVLVDGIDGLDQSRNL 162
Aspergillus saitoi IDYSKMTT-----VSLFETIRYLAGMLSGYDLIGKGVSDVQSSSKIDVYLTQKGL 164
Mns1b VDYKKNM-----VSLFETIRYLAGMLSGYDLLKGPAGLVLD--SRVVDYLSQSRNL 164
Trichoderma reesei INFPTTAVANQG--SSVFETIRYGLGLGALVLDGRGPFSSGLNLTIVLNSLRQAET 160
Mns1c IERSPHSPSSSGSTINIFETIRYGLGLAALVLTG-----CRETRILDKALQL 228

<i>Aspidellium citrinum</i>	ADVLFKAPDTPSGVGYNNINIT-SHGND--GATNGAVAGTGLVIAKTRLSLTQDREY	218
<i>Aspergillus saitoi</i>	ADVLFKAPDTPSGVGYNNINIT-SHGND--GATNGAVAGTGLVIAKTRLSLTQDREY	218
<i>Msa1B</i>	AEVLFKAPDTPSGVGYNNINIT-SHGND--GATNGAVAGTGLVIAKTRLSLTQDREY	217
<i>Trichoderma reesei</i>	ANGLVKAPDTPSGVGYNNINIT-SHGND--GASNNVAEIGSLVIAKTRLSLTQDREY	217
<i>Msa1C</i>	GEMITTSPTDENKMPVFRWNLKACGNORPRAAVOGVLAEASSLRFPTLSLTQDREY	268

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Aspergillum.citrinum      AKLSQKAKSEYLLKPPQKSEFFPGVLGSSININDQPAD-RSVNNGGDDSEYKLLIKY 277
Aspergillum.saitoi       ALDSQKAKSEYLLKPPQKSAEFPGLGSSINISNQPAD-TQSVNNGGDDSEYKLLIKY 278
MnslB                     ALISQRAHREYLLHPPEKAYEFPGLIGSAVINDGKLKA-SGHSVNGGADSEYKLLIKY 269
Trichoderma.reesei       AQIAQKAKSEYLLNPK-GSPENAFHLLITVTSNNGTPQD-BGHSVNGGADSEYKLLIKY 283
MnslC                     FDAASR-ITDLDGAGGHTLR-IPGLNVPSVNLQKQDLTRGSTFSFGMGADGAYEYKLTKY 346

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<i>Penicillium citrinum</i>	VYDP--KRFETTKYKRVVLAESTIKHLKSHKSPKRFDTLLPS	YGNR--NYDLSSCH	323
<i>Aspergillus saitoi</i>	VYDP--KRLGLYKRVVLAESTIMQHLAEKSPKRFDTLLPS	YDNG--TLGLSSCH	323
<i>Mnsl1</i>	VYDP--KRLGLYKRVVLAESTINHLASHPKRFDTLLPS	YNEEHLGLTSSCH	322
<i>Trichoderma reesei</i>	LYDP--VAFAYKRVVLAESTIGLHSHSTKRFDTLLPS	YVQO--STKNGS	327
<i>MnslC</i>	RLGLGVQKVPQYRIKRNALDAGTRHLKPRMTDPAHILLPGVAHATSSVLEKPTK		406

<i>Aspicillium.citrinum</i>	LATCDGSGPLGTGVDLRDQDITGFLGVLVDGCRATYNSITGKIDPSGWDGPD	-----	KK	343
<i>Aspergillus.saitoi</i>	LATCDGSGPLAGTGVLRMRDITNGFLGVLVDGCRATYNSITGKIDPSGFWMD	-----	SD	385
<i>Mns1B</i>	LATCDGSGPLGTGVDLRDQDITGFLGVLVDGCRATYNSITGKIDPSGWDGPD	-----	SD	376
<i>Trichoderma.reesei</i>	LASPGGSGIRIGLILIMBKQYIDGKIKASSYPTGTYTASGIGDPSFAMDVSDGAGS	-----	38	387
<i>Mns1C</i>	LACPVGGTALAKGLFHWQYITGFLGVLVDGCRATYNSITGKIDPSGFWMDTVEACP	-----	SV	463
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<i>Penicillium.citrinum</i>	VPDSQGLKEFKAGQYIGSSGYTLVRPVLISFYFAURVTGKGLTVDRWNNAFVAINSTCR	-----	443	
<i>Aspergillus.saitoi</i>	VPDSQGLSIEKAGQYIGSYTLVRPVLISFYFAURVTGKGLTVDRWNNAFVAINSTCR	-----	445	
<i>Mns1B</i>	VPDSQGLSIEKAGQYIGSYTLVRPVLISFYFAURVTGKGLTVDRWNNAFVAINSTCR	-----	445	
<i>Trichoderma.reesei</i>	VPDSQGLKESAPGQVITVATLFLPFTESLXYAVTVDRWQGLVAALSAISLDEACD	-----	447	
<i>Mns1C</i>	ARCPWDPTRGITTYIVKRGHIGLPEKPMESIVPMKLTGDEKCRKAAMRMTALVAVTK	-----	522	
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<i>Penicillium.citrinum</i>	DGSGFAVSDVWKNAGSG--KYDQSGSLFASVKNYSYLAHGSDAAMVQKSGQNTFYVTE	-----	562	
<i>Aspergillus.saitoi</i>	DGSGFAVSDVWKNAGSG--KYDQSGSLFASVKNYSYLAHGSDAAMVQKSGQNTFYVTE	-----	564	
<i>Mns1B</i>	ATGFAGLNLYANAGSG--RINDQSGVFAEVLKYGKLYTAPDHWVQKSGQNTFYVTE	-----	565	
<i>Trichoderma.reesei</i>	GSATSSINDVYQANGSG--ADPMESVFAEALYKGLYFASDSDVQATSGNKFVTE	-----	506	
<i>Mns1C</i>	EGGFAVSDVWKNAGSG--KYDQSGSLFASVKNYSYLAHGSDAAMVQKSGQNTFYVTE	-----	577	
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<i>Penicillium.citrinum</i>	AHPISVARN-----	511		
<i>Aspergillus.saitoi</i>	AHPFVRSST-----	513		
<i>Mns1B</i>	AHPFKVYTP-----	505		
<i>Trichoderma.reesei</i>	AHPPTSRSRBRGHLA-----	513		
<i>Mns1C</i>	AHPILRAGS-----	586		